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REPUBLIC OF THE PHILIPPINES

Its Agricultural Economy

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REPUBLIC OF THE PHILIPPINES
--ITS AGRICULTURAL ECONOMY

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SUMMARY

Agriculture is the foundation of the Philippine economy. It supports approximately two-thirds of the population, contributes about 40 percent of the national income, and supplies more than 70 percent of all exports by value. The country is a net exporter of food and fibers, chiefly because of large exports of coconut products, sugar, and abaca.

Import restrictions, technological progress, changing food tastes, and a rapidly increasing population have altered United States-Philippines trade patterns. Total U.S. exports to the Philippines in 1958 dropped 21 percent from the previous year; however, U.S. agricultural exports increased 11 percent.

As a result of development of the Philippine textile industry, raw cotton imports from the United States in 1958 were 19 percent greater than in 1957, 28 percent more than in 1956, and 53 percent larger than in 1955. Canned filled milk, made from coconut oil and nonfat dry milk, has been rapidly displacing U.S. evaporated milk in the Philippines. Production of filled milk has caused a shift from canned milk imports to imports of dry milk solids. Another shift in trade is expected from imports of wheat flour to imports of wheat as a result of establishment of Philippine wheat flour mills. Thus, the opportunity for expanding U.S. agricultural exports to the Philippines lies in three commodities--cotton, nonfat dry milk, and wheat.

Over half of the total area of the Philippines is considered suitable for agriculture, but it is estimated that less than one-fifth of the total is in farms and about one-eighth is under cultivation. Most of the cultivated land is owned by a relatively few large proprietors, with much of it being operated by tenants. Rural incomes generally are low, owing in part to the land-tenure system as well as to inadequate farm credit facilities and the relatively inefficient marketing system.

About three-fourths of the crop area is planted to food crops and approximately 85 percent of the people depend on these crops for their livelihood. Rice and corn, grown on over 60 percent of the crop area, are the leading food crops. A Four-Year Plan, adopted by the Philippine Government in 1958, calls for self-sufficiency in rice and corn. Other goals of the Philippine agricultural policy include expansion and diversification of farm output and improvement of economic and social conditions in rural areas.

GENERAL CHARACTERISTICS

Spain ruled the Philippine Islands for nearly four centuries after they were discovered by Magellan in 1521. The islands, ceded by Spain to the United States in 1898, gained almost complete autonomy in 1935 and became fully independent on July 4, 1946. Three years of Japanese occupation, 1942-44, and the ravages of war left the Philippine economy in critical condition. Manila suffered greater destruction and damage during World War II than any of the world's other major capital cities, with the exception of Warsaw. Large financial grants and other assistance from the United States helped to bring about a recovery of the Philippine national economy in the early postwar years.

Geography

The Republic of the Philippines, consisting of over 7,000 islands, extends for a thousand miles off the southeastern part of the Asian continent. Eleven islands account for 94 percent of the total land area of 115,000 square miles, equal to the combined area of Georgia and Florida.

Luzon and Mindanao, situated, respectively, at the northern and southern extremities of the archipelago, are the largest of the islands. The other nine are Palawan, Mindoro, Masbate, Samar, Negros, Panay, Leyte, Cebu, and Bohol.

Topography

The Philippine archipelago has a diversified terrain. Mountains, varying greatly in height and ruggedness from island to island, occupy the greater part of the land area. But coastal plains, valleys, rolling uplands, and plateaus are also to be found on almost all of the principal islands. Nowhere are the mountains too high for plant life, but the higher elevations and some of the upland areas are very rough and limit cultivation.

Luzon and Mindanao each has two of the four large valleys or plains in the country. The central plain of Luzon, drained by the Pampanga River, stretches north from Manila Bay to merge with the coastal plain, drained by the Agno River and bordering the Lingayen Gulf. This plain has long been settled and is one of the more densely populated farming areas of the country. The Cagayan Valley, lying between the eastern and central mountain ranges (Sierra Madre and Cordillera Central) of northern Luzon, has been somewhat isolated from the rest of the island by inadequate transportation; here, room remains for considerable agricultural expansion. The Agusan Valley in northeastern Mindanao is still more sparsely populated. In the southwestern part of that island, the Cotabato Plain, drained by the Mindanao River, is the largest undeveloped agricultural area in the Philippines.

Among other small lowland areas, which are generally well populated, the most important agriculturally are the wide western plain of Negros; the central plain of Panay; the Bicol Plain in southeastern Luzon, along the volcanic chain containing Mayon Volcano; and the northern plain of Leyte. Also of agricultural importance are some of the upland and mountain areas, especially the densely populated mountain region in northwestern Luzon. Here are the famous rice terraces of the Philippines.

Climate

Philippine lowlands have a year-round hot, humid climate in contrast to the more temperate climate of the highlands. As in all tropical regions, the annual range in average temperatures from the coolest to the warmest month is narrow. The coldest temperatures of the year are commonly not more than 20 to 30 degrees Fahrenheit lower than the hottest.

Except at points of higher elevation, annual mean temperatures are around 80° F. Mean monthly temperatures also stay within a few degrees of this figure except in northern Luzon, where the variations are slightly greater. Where there is a pronounced dry season, temperatures are highest during April, May, and June, moderating slightly when the rains begin. This more or less constant temperature would make crop cultivation possible the year round were it not for the seasonal variations in rainfall.

Rainfall, in contrast to temperature, varies greatly in different parts of the Philippines. Although annual rainfall is ample in nearly all parts of the country, the amount received during some seasons of the year is inadequate in some areas. The northeast monsoon from November through early March and easterly winds during the spring bring moisture over a greater part of the eastern and central areas. High mountain barriers on some islands, however, prevent much of the moisture from reaching their western portions, which instead have a dry season during this period. During the southwest monsoon, which lasts from June to October or later, storms pass over the islands and bring rain to east as well as west coasts. Typhoons also bring rain during this period.

The length of the dry season varies widely from one part of the islands to another. It exceeds 6 months only in the northwestern coastal area of Luzon and a few small localities, but a good part of Luzon and of some other islands have 4 to 6 months of drought a year. Mindanao, with more or less sufficient precipitation throughout the year, has the most favorable rainfall distribution for agriculture.

Although typhoons of more or less violence occur at various times in the Philippines, those passing over the land occur most frequently in July, August, and September. These typhoons occasionally do extensive damage to trees and crops, especially in the islands of Luzon and Samar. Sometimes when most severe, they are accompanied by heavy rains, and these flood the streams and lowlands. After many year's study of the history of these storms, the Philippine Weather Bureau can predict their approach with great certainty. Southern Mindanao and the Sulu group are practically free from these storms, which generally originate to the east and southeast of the archipelago.

Soils

Philippine soils may be placed in four soil associations: (1) Latosols and associated soils on mountains and steep slopes; (2) Latosols and associated soils on plains and hills; (3) Alluvial soils; and (4) Grumusols.

In the Philippines, as in most other tropical countries, Latosols predominate. Most of the Latosols occur on terrain too steep for agricultural use, although some sheer valley walls are terraced for wetland or lowland rice production.

Alluvial soils, the most significant agriculturally, are the most extensive associates of the Latosols. On Luzon and Mindanao, they occupy several broad, level to nearly level plains. Elsewhere on these and on other islands, they occupy numerous small areas, interspersed among level to steeply sloping areas of Latosols, especially in narrow inland valleys and on island perimeters. As a group, they are more fertile and are more intensively used than other Philippine soils, but production could be greatly increased by proper fertilization.

Grumusols are most common on plains and hills in the western and southern parts of the island group. Because of their heavy texture and a tendency toward excessive wetness or dryness, these soils are difficult to manage. A large part of their area, however, is used for production of wetland rice.

Population

The Philippine population, estimated at 23,562,900 on July 1, 1959, is increasing between 2 and 3 percent per year, a high rate even by Asiatic standards. Population density is 205 persons per square mile.

The Filipinos are chiefly of Malayan stock, but there are many ethnographic groups. Some 400,000 Chinese constitute the largest element of the foreign population. Although less than 2 percent of the population, the Chinese dominate retail and international trade and operate most of the rice and lumber mills.

AGRICULTURAL PATTERNS AND POLICIES

Land Use

More than half of the total land area is considered suitable for agriculture, but according to the latest census only 12.5 percent was under cultivation and less than 2 percent was in pastures within farm boundaries. Most of the land not in farms is government-owned and covered with grass and forests.

Of the cultivated area, land in rice accounted for 44 percent in 1948, corn for 10 percent, and coconuts for 20 percent. Because of multiple cropping and intercropping, the total planted area was larger than the cultivated area by approximately 12 percent. The area used for pasture also probably exceeded the area in pasture within farm boundaries, as some of the public land is grazed.

Since the latest census (1948), a substantial amount of new land has been put to agricultural use in sparsely populated areas. Migration to such areas took on significant proportions around 1950, and has been encouraged by several government programs for opening public land to settlement. These programs received emphasis under the joint U.S.-Philippine development program initiated in 1951. They include road building and improvement on Mindanao and Palawan; malaria control; accelerated classification, survey, and subdivision of public lands; and more organized migration and settlement.

With the passage of the Land Settlement Act in 1954, the government revised its organized migration and settlement program and created a new agency to handle it. The National Resettlement and Rehabilitation Administration (NARRA) extends credit assistance in kind to the perspective settlers by providing them with transportation to the settlement area, a house there, the necessary farm requisites, food rations until they can meet their own requirements, and other services. Repayment of the advances begins 10 years from date of arrival, in easy installments, without interest. The land--usually 15 to 25 acres--is given free. Title is issued in 2 years if requirements for development of the farm and home lots have been fulfilled. By early 1958, NARRA had resettled 22,018 families and issued 6,774 land titles.

Table 1.--Land utilization: Total area, type of use and percent distribution, 1957

Use	Area	Percentage of total
	1,000 acres	Percent
Land in farms: [1]		
Cultivated	9,172	12.5
Idle	2,078	2.8
Pasture	1,154	1.6
Forest	1,255	1.7
All other	492	0.7
Total	14,151	19.2
Forest land:		
Commercial	28,206	38.4
Noncommercial	11,021	15.0
Total	39,227	53.4
Potential agricultural lands:		
For crops	6,064	8.3
For pasture	12,535	17.1
Total	18,599	25.3
All other	1,512	2.1
Total land area	73,489	100.0

[1] Breakdown according to 1948 Philippine census data.

Land Tenure

Owner-operated and tenant-operated farms are both common in the Philippines. According to latest official data (1948), some 62 percent of the farm operators were owners or part owners of their farms and held 70 percent of the farmland, whereas 37 percent were full tenants who operated 27 percent of the farmland. Later surveys, however, indicate that official statistics underestimate the prevalence of tenancy and suggest a proportion of 46 percent or more for full tenants. A few farm managers operated some 3 percent of the farmland in 1948 for large landowners or corporations.

The percentage of tenants as compared to owner-operators varies considerably by area as well as by crop. Tenancy rate is lowest in the more recently settled areas and where there is still a great deal of public land. Tenants work less than one-fifth of the coconut and abaca farms, but close to one-half of the rice and corn farms and even more of the sugarcane farms.

Some of the tenant-operated farms are large and employ hired labor to cultivate the land. Many large landowners, however, either divide their land into small lots for leasing or lease it to large tenants who subcontract it out in small plots. Nearly all of the tenant operators are sharecroppers, who generally provide their own labor and that of their work animal, while the landlord provides seed, cash for growing the crop, and management, as well as the land.

Owner-operated farms are larger on the average than tenant-operated farms. But they also are commonly small, often too small to provide the bare essentials of living or full employment for the farmer and his family. Many families on small farms supplement their farm income from other sources.

Table 2.--Farmland: Distribution of farms by area and classes of land, and tenure of farm operator, 1948

Category	Owners	Part owners	All tenants	Farm managers
	Percent	Percent	Percent	Percent
Number of farms......	52.5	10.0	37.4	0.1
Total area in farms..	61.5	8.6	27.1	2.8
Cultivated........	54.3	9.8	33.9	2.0
Idle..............	77.5	5.3	13.4	3.8
Pasture...........	68.3	7.1	18.4	6.2

Strained landlord-tenant relations, which gave rise to violence against the landlords in 1948-51, have long been a cause of rural unrest. Legislative action to protect the tenant and improve the tenure system has been taken at various times since the turn of the century. Renewed efforts to achieve these goals were made in 1954 and 1955, when the Congress not only adopted the Land Settlement Act, but also three other land reform measures.

The Agricultural Tenancy Act of 1954 was designed to insure an equitable landlord-tenant relationship. It provides that the landlord should not receive more than 30 percent of the net production, i.e., of that remaining after deduction for seed, fertilizer, pest control, reaping, and threshing; that the tenants should not receive less than 30 percent of the net production; that tenants may not be ejected without permission of the courts; that landlords may not charge more than 8 percent interest on production loans to tenants; and that tenants may have a share in the management of the farm.

The Tenancy Act is administered by the Agricultural Tenancy Commission. Its duties are to inform landlords and tenants of their rights and obligations under the law; to try to mediate disputes; and to engage in basic research to determine more equitable sharing arrangements between tenant and landlord.

In 1955 a mobile Court of Agrarian Relations was established. It has exclusive jurisdiction over landlord-tenant disputes that cannot be settled by mediation and is required to decide the cases within a fixed period of time.

Also in 1955, the Land Reform Act became law, providing for redistribution of large holdings where tenancy conditions cannot otherwise be remedied. This act is carried out by the Land Tenure Administration (LTA). On petition of the tenants, LTA may purchase landholdings, either by negotiation or expropriation, for subdivision and sale to the tenants or qualified occupants. Before the government's final acquisition of the land, the prospective smallholders are required to form a cooperative to obtain credit from the Agricultural Credit and Cooperative Financing Administration (ACCFA). Tenants displaced in the effort to create small holdings large enough for economic operation are moved to resettlement areas by the Resettlement Administration.

By early 1958, LTA had 39 large holdings, totaling about 1.2 million acres under its management and had issued sale contracts and land titles to 6,289 tenants.

Farm Labor

The agricultural labor force in the Philippines has been increasing; it went up 12 percent between 1948 and 1957. According to the estimate for 1957, the economically active population engaged in agriculture included 3.3 million males and 2.7 million females, or a total of 6 million persons 10 years of age or older.

Hired workers are generally found on the large farms producing export crops, but often on small farms too. Their employment is seasonal, and they are usually recruited from nearby areas. Migratory workers (sacadas) furnish most of the labor on the sugar plantations of Negros.

Unemployment and underemployment go far to explain the low farm income in the Philippines. Most farms are not large enough to provide 12 months' labor for the farm family. The average family receives more income from work off the farm--on some other farm or at some trade or other type of occupation--than from sale of produce from the farm itself, according to a 1957 study by the College of Agriculture and Central Experiment Station at the University of the Philippines.

Production Practices

Multiple cropping and intercropping. -- Except in the western part of several of the islands where there is an extended dry period, the climate of the Philippines is well suited to multiple cropping. More than one crop is produced on the same area on about 34 percent of the farms. In the Bicol region two crops of rice are commonly produced on the same land in a single year. In northern Luzon, tobacco is quite frequently grown after rice. Where upland rice is grown, corn is sometimes planted after the rice harvest. In the Visayan Islands two crops of corn are commonly produced and on Cebu many farmers harvest three corn crops in a single year.

Interplanting of annual crops or, in some places, fruit trees in coconut groves before the coconut trees come into full bearing is also common practice. On some farms, such crops as corn, upland rice, vegetables, and root crops are regularly grown between the coconut trees. Another form of intercropping sometimes used is the planting of beans or vegetables on rice paddy dikes. Intercropping in abaca plantations, though not widespread, is now discouraged in areas subject to mosaic disease.

Fertilizers. -- Only a small percentage of the crop area is fertilized. The country has no significant natural deposits of fertilizer materials and domestic production of fertilizer consists of about 35,000 tons of ammonium sulfate annually from a single government-owned factory. In some areas a low-grade organic fertilizer, known locally as Maglow and obtained from marine sedimentary material, is used for rice and other crops with good results, but no data on the quantities of this material used are available. Most of the fertilizers are imported. The shortage of foreign exchange has tended to limit imports. In 1956, only 68,500 metric tons of fertilizer materials were imported although in 1957 the quantity rose to 158,200 tons.

The largest share of the imports has been nitrogenous fertilizer, principally ammonium sulfate and ammonium phosphate. The bulk of these materials has come from the United States and Canada. Fairly large quantities of high-analysis mixed fertilizers and smaller amounts of superphosphate and sulfate or muriate of potash are imported each year. Most of these materials are obtained from the United States, but Western Europe, particularly the Netherlands, supplies most of the superphosphate.

Most of the fertilizer used in the Philippines is applied to sugarcane. Almost all the larger growers and many of the small producers apply fertilizer, principally ammonium sulfate or ammonium phosphate. A large proportion of the commercial pineapple area and an increasing proportion of the flue-cured tobacco area are fertilized. Most of the small farmers, including the bulk of the rice and corn producers, use no fertilizer in spite of government efforts to encourage its use. According to estimates by the Fertilizer Administration, only 18 percent of the rice area was fertilized in 1956.

Mechanization and farm equipment. -- Although increased emphasis is being placed on farm mechanization in the Philippines, most crops as they are produced in the country do not lend themselves to mechanization and little progress in this direction has been made. The unimportance of machinery on farms is indicated by the average value of farm equipment, as reported in the 1948 census, equivalent to only $26 per farm.

Probably the most useful single farm tool is the bolo, which is used to harvest sugarcane and which serves as an ax, knife, plane, and sometimes a hammer. Hoes are commonly used for cultivating, mattocks for digging root crops, small scythes and hand sickles for harvesting rice, and forks and rakes, mostly made of wood, for threshing. Iron and steel shovels are also in use.

Most of the recent expansion in mechanization has occurred in Mindanao, where new land is being brought into production and the larger farm unit makes mechanization practicable. Farm machinery is beginning to be used in corn, upland rice, and root crop production.

In spite of the emphasis placed on mechanization, certain inherent conditions resist mechanization. The great majority of the Philippine farms are too small to use a farm tractor and accessories economically. On many land holdings large enough for advantageous use of tractors, mechanization would displace a number of tenants and workers who would have no other immediate means of livelihood. In established rice areas the present size and arrangement of paddies make it difficult to use machinery. Finally, the high cost of tractors and farm machinery, along with the scarcity of adequate financing, makes it difficult for most farmers to acquire machinery.

Irrigation. -- In the Philippines, irrigation is used chiefly for rice. Although some land is irrigated to grow other crops in the dry season and irrigation of sugarcane has been found to be profitable in some areas, only a small percentage of the area occupied by these crops is being irrigated. Approximately 10 percent of the rice land has a reliable source of irrigation. Most of the remaining area depends solely on rainfall to flood the fields.

The 1948 census reported 237,422 irrigated farms with 988,699 acres of irrigated land. By the latter part of 1957, the irrigated area in the Philippines had increased to 1,624,201 acres. Of this, 566,366 acres were covered by government gravity and pump irrigation systems, and the remaining 1,057,835 acres were in private irrigation systems. The bulk of the irrigated land is on Luzon.

Control of plant and animal diseases and pests. -- Philippine crops are plagued by a number of serious diseases and insect pests, as well as by rodents. Pest damage to crops runs high. Although definite statistics are not available, estimates as to the average annual loss from crop pests are usually placed at 20 percent or higher.

At present there is no local manufacture of insecticides, fungicides, or spray equipment and all of these materials used must be imported. The United States has supplied the bulk of pesticides imported. Other sources were mainly Japan and the United Kingdom.

Although various insect pests cause substantial losses each year to rice, corn, and other food crops, control measures are used on only a small percentage of the infested area. The U.S. International Cooperation Administration (ICA) estimates based on the amount of insecticides used on rice, indicate that no more than 5 percent of the field plantings are actually sprayed to control insects, although at least 50 percent of the area should be sprayed each year.

Vaccines are available for several of the more important animal diseases in the Philippines, including anthrax, hemorrhagic septicemia, and hog cholera. Inoculation of animals in infested areas has helped to keep diseases under control. Rinderpest has been eliminated and its re-entry into the country is prevented by import restrictions and quarantine.

Seed improvement. -- One of the principal causes of the low crop yields in the Philippines is the use of many low-yielding varieties. Steps are being taken by the Department of Agriculture and Natural Resources to replace inferior varieties with standard ones of superior yielding ability and quality. Programs are being conducted to produce and certify recommended pure high-yielding upland and lowland rice varieties and hybrid corn varieties in quantities that will eventually meet the seed planting requirements.

Agricultural Cooperatives

In an effort to improve the marketing system, the government has been promoting farmer cooperatives. This is a major function of Agricultural Credit and Cooperative Financing Administration (ACCFA), created in 1952. Its other functions are to establish an orderly, systematic, and producer-controlled marketing system, to extend liberal credit to farmers, to place agriculture on a level of economic equality with other industries, and in general to elevate the level of living of the rural population.

The cooperatives organized by ACCFA, which are known as Farmers' Cooperative Marketing Associations (FACOMA), are multiple purpose in type. They give warehousing, processing, and marketing services to members and extend them credit. Some serve as distribution centers for farm supplies and consumer goods. All are under the supervision of ACCFA, which helps to finance their activities.

Between 1952 and January 1, 1959, there were 502 of these multi-purpose cooperatives formed. Although these cooperatives have increased at a rapid rate, they still serve no more than one-fifth of the total farms in the country as indicated by the 1959 membership of 289,121. FACOMAs are set up as private business enterprises, owned, capitalized, and controlled by small farmers.

On June 20, 1959, President Garcia signed into Law Senate Bill No. 388, creating the Philippine Virginia Tobacco Administration (PVTA). The new law takes away from ACCFA its tobacco buying program, and places in the hands of the PVTA the administration of government operations in connection with the Virginia tobacco industry. The new law also removes the expensive state-financed subsidy on sun-dried tobacco.

Cooperatives outside the ACCFA-FACOMA system include pump irrigation associations, organized by the Irrigation Service of the Department of Public Works and Communications. There were 245 of these associations in 36 provinces in mid-1957.

Agricultural Credit and Taxation

Credit. -- Until the early 1950's there were practically no banking services for small farmers in rural areas of the Philippines. In 1952, the Philippine Congress passed a law establishing a system of liberal credit especially designed for them. ACCFA provides the credit. Its loans are of two general types: (1) Personal loans to individual farmers, and (2) cooperative loans to FACOMAs. Personal loans are of four kinds--production loans, farm improvement loans, facility loans and commodity loans. Cooperative loans are in two forms--facility and merchandizing loans.

Another source of credit is the Rural Banks Administration under supervision of the Central Bank, also established in 1952, which provides credit at reasonable terms not only to small farmers, but also to merchants and local industries in rural Philippines. Rural Bank loans are of four types--agricultural, commercial, industrial, and consumption. Small farmers who cultivate less than 50 hectares (123½ acres) and rural industries with a capital investment of less than 25,000 pesos (US$12,500) have priority.

A third source of credit to Philippine farmers is the Philippine National Bank (PNB), created in 1916 as a government institution to assist the economic development of the country. The largest share of PNB's operations in the field of agriculture is loans for sugar production; however, loans on rice, coconuts, and several other crops have increased significantly.

The Development Bank of the Philippines (DBF) is rapidly taking the place of the PNB as the major government source of agricultural credit, although PNB continues to be the primary source of credit for the sugar industry. The DBF was created in 1946 and started operations on January 2, 1947. Formerly entrusted with a major part of the rehabilitation and reconstruction program of the Philippine Republic, it has recently geared its operations to extending agricultural loans. Aside from augmenting the capital of rural banks, it maintains special financing plans for coffee, cacao, and livestock. Early in 1959 the bank embarked on a $25-million agricultural program for both food and commercial crops from collections and peso funds generated by the sale of U.S. agricultural surpluses, of which $9.5 million was committed by the International Cooperation Administration and the National Economic Council.

Taxation. -- Philippine land taxes are very low by Western standards. As of 1955, farmlands were valued for tax purposes at about one-fifth of their actual value; and the tax rate was 1 percent of the assessed value. Moreover, a substantial part of the taxes on rural land (40 percent in 1954-55) is not collected.

But small farmers, along with others in low income brackets, pay a disproportionately large share of the tax revenues, for the tax system is heavily weighted against low income groups. Most revenues come from sales and excise taxes, import duties, and other indirect taxes. In 1949, for example, indirect taxes accounted for 84 percent of the national government's income from taxation, with income and inheritance taxes accounting for the other 16 percent. In the same year, real property taxes accounted for only 27 percent of the revenue raised by local governments.

Marketing and Transportation

Marketing. -- The Chinese, a relatively small part of the total population, have played an important role in the marketing system. In addition to supplying farmers' needs for food, clothing, and production supplies, Chinese merchants have also been the principal buyers of the farmers' produce.

FACOMA s, which are expanding at a rapid rate, are expected to partially replace local Chinese merchants as the cooperatives establish an orderly, systematic, and producer-controlled marketing system.

Owing to strong nationalistic tendencies, the Philippines passed a law aimed at gradually eliminating the Chinese from retail trade. Another law established the Filipino retailers' fund to provide loans to Filipino businessmen and requiring also that 30 percent of imports that are defined as "prime commodities" be reserved by importers for Filipino merchants. The activities of the National Marketing Corporation (NAMARCO) also assist Filipino distributors. Commodities are imported by NAMARCO on a tax and duty-free basis in competition with private traders. These commodities are then supplied to Filipino NAMARCO dealers for sale at prices which are intended to be competitive with those of alien-owned stores.

Chinese are also important in the export-import trade. Importers are located primarily in Manila, as are exporting organizations, but many of the exports move out of ports located near the sources of production. Licensed public storage warehouses, which include cold storage facilities, are located primarily in and around Manila. Similar general merchandise warehouses are also available in other cities.

Approximately 200 special-type warehouses are located in Manila and various other cities for storing local products, such as rice, sugar, and copra. There are 6 customs and internal revenue bonded warehouses in Manila, and one customs bonded warehouse in each of the port cities of Davao, Iloilo, and Cebu. Private customs bonded warehouses are also located in Manila.

In 1955, there were approximately 78,000 wholesale and retail establishments in the Philippines, excluding markets in private homes. Most wholesale and retail establishments are located in large cities, with many wholesalers also carrying on a retail trade. Most of the operations are small scale, with only about one-fourth of the establishments employing 5 workers or more.

Most marketing activity by cooperatives has been related to two crops--rice and flue-cured tobacco--but in some areas where there is specialized production of other crops, cooperative marketing has been introduced. As the movement continues, the cooperatives are expected to function increasingly as marketing agents for other crops and to exert more of a stabilizing influence on marketing. While the influence of these cooperatives on marketing is increasing each year, Philippine agriculture still has a great marketing need for better channels through which farm products can move to central markets at lower cost.

Transportation. -- The establishment and maintenance of an adequate system of transportation in the many islands of the Philippine Republic are both difficult and expensive. Near population centers, such as Manila and other coastal cities, land transport facilities are well developed. Movement between these centers is primarily by boat or airplane.

Road transportation handles most of the traffic within the islands. Overland distances are short, and roads serviceable for motor carriers connect the principal agricultural producing areas with the important consuming centers or coastal ports. Farm produce from these producing areas, as well as agricultural requisites for delivery to these areas, moves chiefly by truck. But in the many rural areas still without roads usable by trucks, small two-wheeled carts drawn by carabaos or cattle are still used by farmers to haul produce to mill, warehouse, or market.

Education, Research, and Extension

Education. -- Two-thirds of the people 10 years old and older in the Philippines are classed as literate--the highest literacy level in the Far East except Japan. Although this level represents substantial improvement since 1939, illiteracy remains a serious problem, especially in rural areas. A survey made in 1952 indicated that one-third of the farm owners and close to one-half of the tenants and farm laborers had never attended school, while at least another third of each group had not gone beyond the fourth grade. Most rural children are deprived of schooling beyond the fourth grade because of lack of schools, especially at the intermediate and high school levels, and limited family finances which prevent their going to school.

Much emphasis has been and is being placed on expanding and improving not only the general education system but also the system of vocational education. By the end of 1956 there were 40 rural and agricultural high schools in the Philippines. In 1957 Congress approved establishment of 13 more. It planned to have at least one agricultural high school in each of the 53 provinces.

Facilities for high technical education are also being expanded. Three new agricultural colleges have been established: The Central Luzon Agricul-rural College at Munoz (Nueva Ecijo); Mindanao Agricultural College at Maramag (Bukidnon); and Baybay National Agricultural School on Leyte. The oldest College of Agriculture is at the University of the Philippines.

Research. -- Public agricultural research is now in the hands of a number of different institutions: The College of Agriculture at Los Banos; the other three agricultural colleges; the Bureaus of Plant Industry, Animal Industry, and Soils, and the Division of Agricultural Economics, all in the Department of Agriculture and Natural Resources; and the University of the Philippines' College of Veterinary Medicine at Quezon City. Seven of these institutions are engaged in plant production research, seven in animal production research, and six in research on soils and fertilizer. Although progress has been made in agricultural research, expansion and improvement on a coordinated and well-planned basis remains a great need.

Extension. -- Agricultural extension was given a prominent role in agricultural development when the Bureau of Agricultural Extension (BAE) was created in the Department of Agriculture and Natural Resources in 1952. BAE had 8 regional offices; 53 provincial offices, one for each province; and 500 municipal offices.

At the end of 1957 there were a little over 1,000 municipal extension workers, including 348 home demonstrators working for the 19,000 barrios in the 1,127 municipalities. An important part of their work consists of getting some big landowners or aggressive farmers to adopt improved practices on their farms, which then serve as demonstrations to others in the community. The extension workers also assist in organizing rural clubs. As of October 31, 1957, there were 947 Farmers' Extension Clubs, 1,385 rural improvement (women's) clubs, and 4,171 4-H Clubs.

Government Administration

Within the Executive Department of the Government is the Department of Agriculture and Natural Resources (DANR), which is charged with the development and utilization of the nation's agricultural and other resources. The Secretary of DANR also has supervision and control of four independent agencies each dealing with a single crop--coconuts, tobacco, sugar, and abaca.

Likewise under the Secretary's supervision and control are the National Resettlement and Rehabilitation Administration and the Agricultural Tenancy Commission, which is also supervised by the Secretary of Justice.

Quite independent of DANR are two other agencies dealing with land tenure problems; two marketing corporations; four credit agencies or institutions; and the Community Development Officer.

AGRICULTURAL PRODUCTION

Agricultural Regions

Luzon is divided into five regions: (1) Central Luzon, known as the rice basket of the Philippines; more than four-fifths of the farms are classified as rice farms and they grow mostly one wet-season crop of lowland rice. (2) The Cagayan Valley to the northeast, which grows more corn than rice and is noted for cigar-wrapper tobacco. (3) The Ilocos (mountain) region to the west; its many deep valleys and cultivated slopes are planted chiefly to rice and corn. This region is noted not only for its rice terraces, but also for the rapid expansion of flue-cured tobacco since 1950. (4) The Bicol region in southern Luzon, which produces mainly coconuts and abaca. (5) The Southern Tagalog region, also in southern Luzon, which produces mainly coconuts and upland rice.

Negros in the Visayas is the center of the Philippine commercial sugarcane production. The western Visayas as a whole grow principally rice and coconuts. In the eastern Visayas, corn and coconuts predominate, with abaca also important. Densely populated Cebu specializes heavily in corn, which is planted on much of the hill land as well as on the coastal plain. Leyte grows most of the region's abaca.

On Mindanao, the Province of Davao has more than half of its cultivated land in abaca and a large area in coconuts. Elsewhere on the island, crop production is not so specialized; rice, corn, and coconuts are leading crops and abaca is also important in some areas. Commercial production of pineapples has been developed in the Province of Bukidnon.

Palawan, the western most large island, has hardly been exploited for agriculture as yet. On areas that are cultivated, rice and coconuts are the principal crops.

Philippine agriculture is based on crop production for food and export. Livestock is relatively unimportant. Rice and corn, the two principal food crops, occupy about 67 percent of the crop area. The three principal commercial crops, coconuts, sugar, and abaca, occupy almost 22 percent of the area. Most of the remaining crop area grows fruit, vegetables, and root crops.

Domestic Consumption Crops

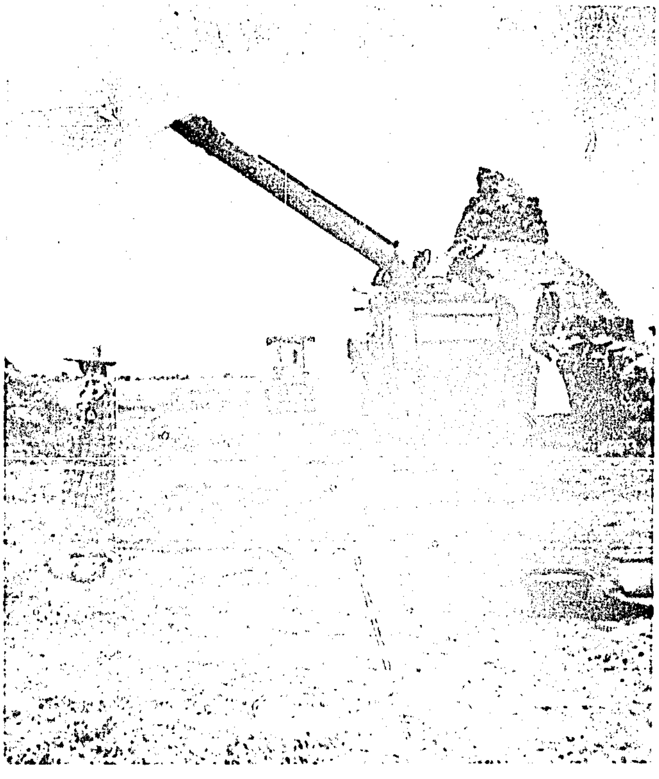
Rice. -- For many centuries rice, or palay, has been grown in the Philippines and at present it is the leading food crop. Substantial quantities of rice are eaten by about 73 percent of the population at all income levels. According to the 1948 census, rice was the predominant crop on 48 percent of the farms. Its area far exceeds that for any other crop, representing 47 percent of the total crop area in 1958.

One of the primary goals of the Philippine Government has been the attainment of self-sufficiency in rice. Except in 1953, however, substantial quantities have had to be imported. In 1958 imports rose to 195,717 metric tons of milled rice.

Estimates of the largest rice crop on record prompted the Philippine Government early in 1959 to pass legislation banning imports of rice. This action, however, does not mean complete prohibition of imports. The President of the Philippines, under terms of the bill, can authorize imports of rice in times of national emergency.

The lack of variation in temperature in the Philippines enables farmers to grow rice every month, depending on the pattern of rainfall or the availability of irrigation water. Consequently, the time of planting and harvesting varies greatly from place to place. The main lowland crop is produced during the rainy season, which in most areas begins in June, but may be as early as May or as late as August. Rice is usually harvested 4 to 6 months after it is planted, the main crop in December and January. In areas where there is no dry season, two crops are sometimes produced.

Upland rice is grown in areas not suited for lowland rice. Since upland rice is not grown in paddies, but depends entirely on rainfall, yields tend to be smaller than those obtained from lowland rice. In 1957 it was estimated that 70 percent of the area was planted with lowland varieties and 30 percent was planted with upland types. The 1958 crop of 2,318,799 metric tons was 12 percent larger than the previous crop.



Though rice is the Philippines' main food crop, most is produced in age-old way. Machinery is not commonly used.

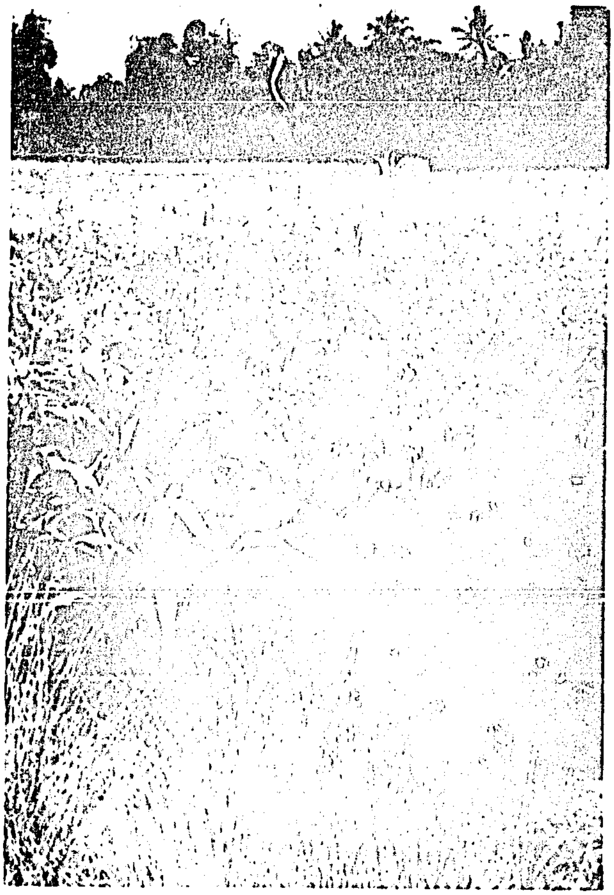
Many of the farmers market little or no rice, producing almost entirely for subsistence. A large share of the rice entering the market system comes from the landlord's share of the crop and from the rice delivered to local merchants or moneylenders in payment for debts incurred by farmers during the season.

Corn. -- Second only to rice as a food crop in the Philippines, corn is the only other grain produced in significant quantity. Corn serves as a substitute for rice and is the principal item in the diet of about 27 percent of the Filipinos.

As for rice, climatic conditions permit the planting of corn at almost any time of the year. Three planting and harvesting seasons are commonly recognized, and in some places three crops may be harvested from the same land in a single year. On the important corn-growing island of Cebu, the first crop is usually planted in April-May, the second in September-November, and the third in December-January. Crops are harvested 3 to 4 months after planting.

According to a DANR survey, 51 percent of the entire 1957-58 Philippine corn crop was harvested from July-December and 49 percent from January-June. February was the month with the largest harvest, about 15 percent of the crop. August and December followed with about 13 percent each.

Very little corn has figured in the foreign trade of the Philippines. The government does not permit imports unless domestic production is critically short of requirements. Because of low production in 1957, 10,748 tons of shelled corn were imported from the United States. In 1958 20,638 tons were imported from the Union of South Africa. Corn production in 1958 was 952,305 metric tons, an increase of about 12 percent over the past crop year.



Cornfield on Luzon. Corn ranks second as a food crop in the Philippines, but is far less popular than rice.

Roots and tubers. -- Roots and tubers furnish an important part of the Filipino diet, either as a substitute for rice and corn or as a supplement. In 1958 root crops were grown on about 5 percent of the total crop area. The principal root crops produced, in order of their importance, are sweetpotatoes, cassava, gabi, ubi, and tugui.

The sweetpotato, or camote as it is known in the Philippines, is grown throughout the country but is of greatest importance in the Mountain Province of Luzon and on Leyte and Samar. Since the crop is produced primarily for home consumption, only a small percentage of the output is marketed.

Cassava, a starch root crop, is grown in every part of the country. It is planted in fields, in backyards or gardens, and along fences. The fresh roots are widely used for food, but are also used to lesser extent in making starch, flour, tapioca, alcohol, and for animal feed. The leaves are used for feed and fertilizer, the young shoots as a vegetable, and the woody stems as fuel.

Gabi, known elsewhere as dasheen or taro and in the United States as elephant's ear, is grown in every province in the Philippines. The tuberous root is used as a substitute for rice, and the stalks and leaves are sometimes used as a vegetable. The plant is commonly grown in the backyard or as a secondary crop. Suckers are used for planting and the crop matures in 8 to 9 months.

Ubi, or winged yam, and tugui, or Chinese yam, are two other root crops of only minor importance.

Fruits and nuts. -- Many varieties of fruit are produced in the Philippines, and fruit products make up an important part of the daily diet. In area and total production, bananas are by far the leading fruit. Most of the production comes from plantings for home use around the farmsteads or in gardens throughout the provinces.

Pineapples are also grown throughout the Philippines for home use, but they are grown on a commercial scale in the Province of Bukidnon on Mindanao, largely for the Philippine Packing Corporation, a branch of the California Packing Corporation.

Next to bananas and pineapples, the most important fruits are mangoes, jack fruit, citrus, lanzones, and payayas.

Vegetables and pulses. -- Many kinds of vegetables are grown in the Philippines, mainly in home vegetable gardens. Commercial production is limited to areas accessible to centers of population. Domestic production appears to be generally adequate for local consumption. Foreign exchange allocations for vegetable imports are limited, and imports of most fresh and many canned vegetable items are banned to protect and encourage domestic production.

The principal leafy vegetables grown are cabbage, mustard, and pechay (Chinese mustard); tomatoes, eggplant, and squash are also important. Vegetables grown in smaller quantities include carrots, beets, cauliflower, radishes, peppers, okra, cucumbers, and a variety of tropical vegetables not common in the United States. Beans and peas are important items in the Filipino diet. Most of the bean crop is harvested as green beans, but some is dried.

Coffee. -- Once an important export crop, coffee was largely wiped out by rust disease before the turn of the century. Since then it has been produced in limited quantities for local consumption, but the Philippines is still a net importer of coffee in spite of the industry's revival since World War II. In an effort to attain self-sufficiency, the government has recently supplied planting materials at low prices and made some credit

Table 3.-- Crops for domestic consumption: Area and production by commodity groups, 1955-58

Commodity group	1955	1956	1957	1958
HARVESTED AREA	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Grains:				
Rice, milled	6,777.0	6,840.0	6,661.1	6,839.7
Corn, shelled	3,868.1	4,370.7	4,186.6	4,443.4
Root Crops:				
Sweet potatoes	449.0	453.2	468.5	472.2
White potatoes	7.4	7.9	8.9	8.2
Cassava	145.3	144.3	142.1	142.3
Other	97.6	123.3	124.5	127.5
Fruits and Nuts:				
Citrus	50.7	52.9	54.6	55.8
Other	821.4	852.2	904.4	959.0
Vegetables:				
Onions	8.9	8.6	9.1	9.1
Other	226.3	230.8	236.5	245.6
Beans and Peas	173.0	186.3	200.4	194.2
Coffee	48.9	53.1	57.8	57.8
Cacao	15.8	16.6	17.5	18.5
Peanuts, unshelled	70.9	72.4	75.4	77.3
PRODUCTION	1,000 m.t.	1,000 m.t.	1,000 m.t.	1,000 m.t.
Grains:				
Rice, milled	2,127.7	2,174.9	2,075.4	2,318.8
Corn, shelled	907.4	895.4	846.6	952.3
Root Crops:				
Sweet potatoes	637.0	772.7	812.1	[1] 834.0
White potatoes	8.1	9.6	10.2	11.5
Cassava	226.7	304.4	297.2	[1] 300.0
Other	531.3	214.9	218.0	[1] 233.0
Fruits and Nuts:				
Citrus	32.8	34.3	36.2	36.7
Other	615.0	638.2	678.4	707.0
Vegetables:				
Onions	10.8	9.3	9.7	10.1
Other	166.6	168.3	174.2	181.6
Beans and Peas	42.0	44.1	47.8	53.0
Coffee	7.1	8.3	9.6	9.7
Cacao	1.5	1.6	1.7	1.9
Peanuts, unshelled	17.9	18.2	18.6	18.7

[1] Estimate

available to coffee producers. In 1958 the area in coffee was over three times as large as in 1940 and production almost five times as large. As more of the newly planted areas come into full production, output will probably continue to increase.

Cacao. -- Although cacao is grown in almost every province in the country, cultivation for a long time was limited to small groups of trees. Recently, the government has been encouraging production in the attempt to gain self-sufficiency. Cacao appears to be well adapted to Philippine areas having a fairly evenly distributed rainfall and no prolonged dry period, particularly on Mindanao, where the crop and plantings are increasing. Domestic production is considerably short of requirements and substantial quantities of beans and powdered cocoa have been imported.

Peanuts. -- Peanuts are grown throughout the Philippines primarily as a food crop; however, small quantities have been exported each year since 1954. A small-scale peanut-butter industry, which produces about 14 tons annually, is expected to expand.

Commercial Crops

Coconuts. -- The Philippine Republic is the world's largest producer and exporter of coconut products. Since 1955 it has accounted for more than 50 percent of the coconut products moving in world trade. During 1952-56 exports of coconut products provided about 50 percent of the country's

Husked coconuts are split with heavy knife. More than half of the coconut products in world trade come from P.I.

export earnings from agricultural products and 38 percent of export earnings from all sources. In 1958 coconuts occupied almost 16 percent of the total crop area reported, ranking third after rice and corn.

Though grown under many different conditions of rainfall and throughout the Philippines, coconuts are not well adapted to regions that have long dry seasons or that have destructive winds. Consequently plantings are concentrated primarily on southern Luzon and on the islands to the south. Production in the Bicol region on Luzon is still important but declining as a result of cadang-cadang disease. Extensive plantings are also maintained along the coastal areas of the Visayas and Mindanao.

Output has advanced fairly steadily since the war. Production of coconuts (in terms of copra equivalent) reached a record level in 1957, but declined 19 percent in 1958. Conditions have been good for the 1959 crop, but production is not expected to reach the 1957 level.

Although the United States was for many years the leading market for copra, the Netherlands replaced it in 1957. Large quantities are also shipped to other Western European countries and to Colombia and Venezuela. The United States is still the principal market for coconut oil and desiccated coconut.

Sugarcane. -- Before World War II, sugar products were of more importance to the economy of the Philippines than coconut products, measured by national income and foreign exchange earnings. Since then the relative importance of the sugar industry has declined as that of the coconut industry has increased. During 1952-56, exports of sugar and molasses accounted for 34 percent of agricultural exports by value and for just over 25 percent of all export earnings.

In 1958 the sugarcane area was 3.6 percent of the total crop area. Area planted to cane for the manufacture of centrifugal sugar is determined by quota allocations which are in line with U.S. import quotas for Philippine sugar, Philippine obligations under the International Sugar Agreement, and domestic requirements.

Cane is grown in every province for the production of low-grade sugar, mostly for local consumption, but the two principal commercial producing areas are found on Negros and in central and southern Luzon. Negros Occidental, with about 48 percent of the total cane area in 1955, produced 58 percent of the centrifugal sugar and 28 percent of the low-grade sugar.

Philippine sugar production during the past 10 years has been on the uptrend as a result of increased plantings and higher centrifugal sugar yields. Average yields for 1953-59 were 19 percent higher than during 1947-52. The high yield in 1957 represented a 42-percent increase over the 1949 average yield.

Sugar supplies for export and domestic consumption were ample in 1958. Except for 1957, the Philippines has filled its U.S. export quota commitments during the last 4 years. Its failure to do so in 1957 was mainly due to errors in determining the domestic consumption quota.

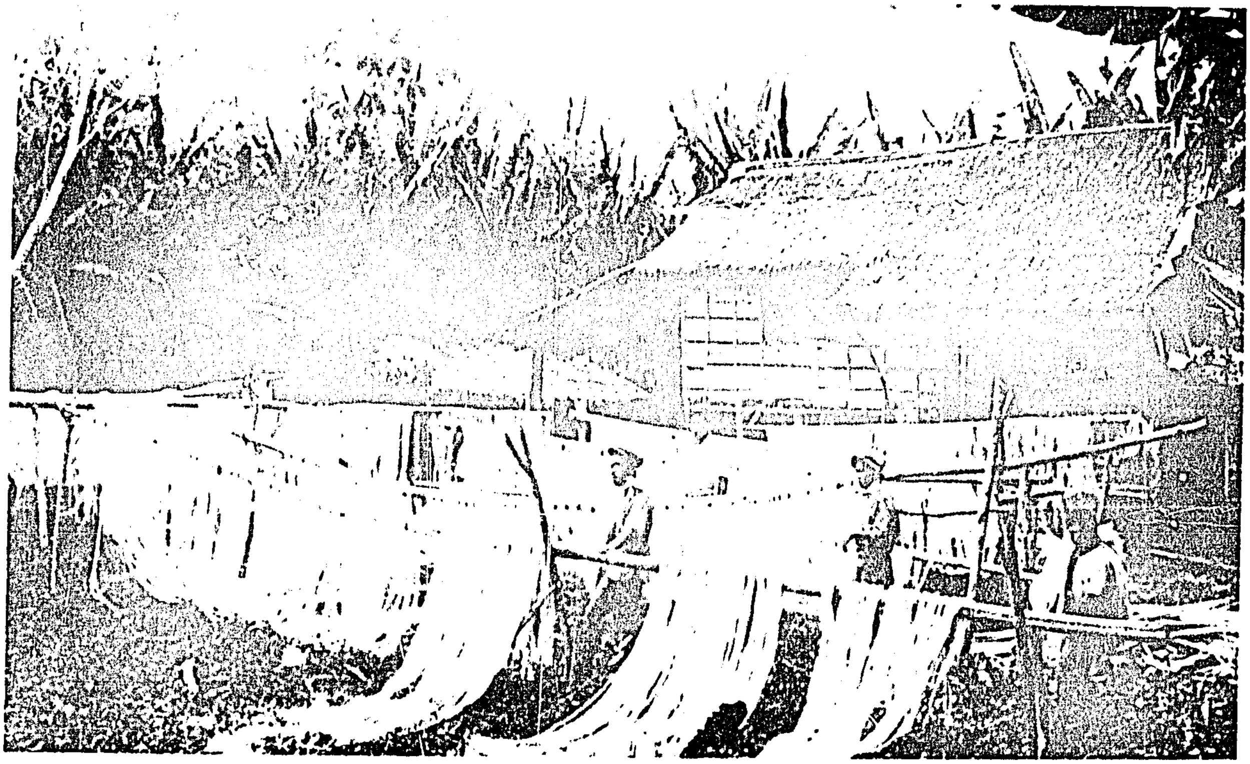
Abaca. -- The Philippines produce more than 90 percent of the world's output of abaca fiber, also known as Manila hemp. Until World War II, abaca was unequaled for making rope and cordage. Since the war, the importance of abaca in the Philippine economy has declined somewhat, reflecting not only the effects of the mosaic disease in the principal producing region, but also low world prices and increasing competition from other hard and synthetic fibers. During 1952-56 the fiber contributed only 8 percent of the export earnings, compared with 13 percent during 1935-39. A little more than 3 percent of the total crop area in 1958 was in abaca.

In 1955 about 55 percent of the country's area in abaca and 61 percent of the fiber produced were reported from Mindanao, mostly from the Province of Davao, which is famed for the superior quality of its fiber. The Bicol region accounted for 34 percent of the area and 27 percent of the fiber produced in 1955. Leyte and Samar accounted for most of the rest.

Almost all of the inspected fiber is exported. Significant quantities of uninspected fiber, amounting to perhaps as much as 10,000 tons in some years, are produced and used in the domestic manufacture of rope and cordage. The United States and Japan together take more than half of the fiber exported. The rest is shipped mainly to the United Kingdom and other Western European nations, although many other countries import small quantities.

Although Manila hemp is still recognized as a superior fiber for ropemaking, a considerably lower cost of production enables sisal to compete effectively with hemp for making binder twine and in other uses where the greater strength of abaca fibers is not essential.

Tobacco. -- Most of the tobacco is produced in northern Luzon in the Cagayan Valley and along the west coast. In 1955 the Provinces of La Union and Ilocos Sur produced about 87 percent of the flue-cured tobacco. Most of the rest was grown in the two adjoining provinces on the north and south.



Abaca is hung out to dry. Nearly all the abaca, or Manila hemp, in world trade comes from Philippines.

Table 4.-- Commercial crops: Acreage and production by commodity groups, 1955-58

Commodity group	1955	1956	1957	1958
HARVESTED AREA	1,000 acres	1,000 acres	1,000 acres	1,000 acres
Coconut	2,451.2	2,451.2	2,460.1	2,464.8
Sugar	593.8	579.9	453.9	487.5
Fiber Crops:				
Abaca	535.7	572.0	541.6	570.8
Ramie	7.2	3.5	3.7	4.9
Cotton	6.9	7.2	7.7	(3/)
Tobacco:				
Virginia	87.2	104.8	120.3	121.8
Native	49.2	94.4	89.2	83.0
Rubber	12.4	12.4	12.4	12.4
Kapok	7.4	7.4	7.9	7.9
PRODUCTION	1,000 m.t.	1,000 m.t.	1,000 m.t.	1,000 m.t.
Coconut:				
Copra 1/	1,140.0	1,319.2	1,293.4	1,350.0
Desiccated	42.0	54.0	56.0	62.2
Sugar:				
Centrifugal	1,105.0	1,031.5	1,250.0	1,331.3
Non-centrifugal	54.4	66.2	68.0	68.0
Fiber Crops:				
Abaca	120.3	125.0	124.7	124.9
Ramie	1.2	1.3	1.6	2.4
Cotton	(2/)	.2	.6	(3/)
Tobacco:				
Virginia	21.9	26.8	31.2	33.2
Native	13.0	20.9	18.4	17.0
Rubber	2.0	2.2	2.6	2.5
Kapok	2.9	3.0	3.3	3.5

1/ Copra equivalent of coconuts and coconut oil.
2/ Insignificant.
3/ Not available.

The area in tobacco reached 209,541 acres in 1958, about 46 percent higher than in 1940. In 1950 the Philippines was successful in producing flue-cured Virginia-type tobacco for use in the manufacture of cigarettes. The government established generous price supports for local production and restricted imports of foreign cigarette tobacco. As a result, domestic production of flue-cured tobacco rose fast. Nearly 97 percent of total government redryings from the 1958 crop was flue-cured and only about 3 percent was sun-dried. However, about 62 percent of the flue-cured leaf was of such low quality that it was not suitable for the manufacture of cigarettes. Production of native tobacco, in the meantime, has dropped. Owing to government emphasis on local production, the Philippines has shifted from a substantial importer of cigarette tobacco to a producer with a severe surplus problem.

Rubber. -- Climatic and soil conditions in the Philippines, particularly in the southern part, are well adapted to rubber production. In 1958, commercial production was limited to Basilan, an island off southwestern Mindanao, but at least 10 plantations ranging from 130 to more than 5,000 acres in size were either planted to rubber or being prepared for planting. Total rubber area in 1958 was estimated at 12,355 acres and the annual output of crude rubber at 2,500 metric tons. At present all the domestically produced natural rubber must be sold in the local market.

Other commercial crops. -- In addition to abaca, the Philippines produces a number of other fibers, including cotton, ramie, kapok, maguey, buntal, and canton. Experimental plantings of jute, kenaf, and sisal have been reported but production has been insignificant.

Livestock and Livestock Products

Production of livestock is not an important enterprise on Philippine farms except for some commercial poultry and dairy farms located near larger centers of population. Nevertheless, there has been a marked increase in the numbers of carabao and hogs since the period before World War II. Despite postwar gains, the numbers of cattle, goats, and horses, are still below the prewar level. Sheep numbers declined sharply during World War II, and have declined gradually since then.

The most common draft animal in the Philippines is the carabao, or water buffalo. The animal weighs approximately 1,100 pounds, stands the heat well, and is capable of doing a large amount of work in the field. It is almost the only animal used in working the rice fields. Although carabaos are found in all parts of the islands, they are concentrated in the rice-producing regions of central Luzon and the Visayas.

Cattle rank next to carabaos in importance for use as draft animals. They are also an important source of meat. The beef cattle industry is still far below the prewar level. In order to improve their cattle industry, the Filipinos hav continued the program of upbreeding their native stock with imported cattle.

As in many other countries, horses are becoming of lesser importance as trucks, buses, and automobiles increase in numbers. Horses are used almost exclusively for drawing two-wheeled vehicles, although a few are also used for riding, pack, and ranch purposes. About one-fourth of the total number is found in central Luzon and almost as many in southern Luzon.

Hog raising is a major enterprise on only a few farms, most of the animals being produced for subsistence or as a source of supplemental income. Although hogs are grown in all parts of the country, they are concentrated on the Visayan Islands and on Luzon, in central Luzon, on the west coast, and in the Cagayan Valley. Goats and sheep are also raised for meat.

Poultry raising was the first of the Philippine livestock enterprises to recover after World War II. Chickens represent about 96 percent of the total poultry population. In most places poultry raising is a neglected backyard enterprise. Specialized poultry farming, however, has grown rapidly since the imposition of import controls in 1949 and has come to supply a substantial percentage of the domestic egg output.

Poultry ranks second to hogs as a source of meat, according to unofficial estimates, which place annual output of poultry meat between 45,000 and 50,000 metric tons. Pork in 1957 accounted for 75 percent of all meat produced.

Imports of meat and meat products have supplied from 10 to 12 percent of the meat consumed in recent years. The bulk of the meat imports have been canned, with canned beef being the largest item. Canned sausages have also been important, as well as fresh beef. Important suppliers include Australia, Argentina, and the United States.

Dairy farming remains an insignificant part of Philippine agriculture and it is unlikely that this situation will change in the near future. Annual domestic production of milk has averaged less than 2 pounds per capita in recent years. Only five commercial dairy farms were reported in 1957. Four of these serve the city of Manila and the other serves Cebu. Because of its relatively low cost, imported milk is the principal source of milk requirements. Recently there has been a shift from imports of canned milk to dry milk solids.

Table 5.--Livestock and poultry: Numbers on farms and number slaughtered, 1956-58

Species	Number of farms			Number slaughtered		
	1956	1957	1958	1956	1957	1958
	Thousands	Thousands	Thousands	Thousands	Thousands	Thousands
Livestock:						
Carabaos.....	3,595	3,584	3,596	35	53	65
Cattle.......	861	883	896	275	279	300
Horses.......	218	219	221	18	20	18
Hogs.........	5,750	6,026	6,084	3,016	3,306	3,328
Goats........	498	530	537	133	157	150
Sheep........	17	18	17	2	3	2
Total.....	10,939	11,260	11,351	3,479	3,818	3,863
Poultry:						
Chickens.....	49,776	51,839	52,469	24,548	26,252	26,346
Ducks........	2,143	2,078	2,109	417	442	445
Geese........	96	102	98	29	35	31
Turkeys......	37	41	41	12	13	11
Total.....	52,052	54,060	54,717	25,006	26,742	26,833

INTERNATIONAL TRADE

International trade in agricultural products is highly important to the economy of the Philippines. Agricultural exports account for approximately half of the country's foreign exchange receipts.

While foreign exchange receipts were higher in 1958 than in 1957, most of the improvement in the balance of payments position of the Philippines resulted from reduced disbursements. Receipts of $673.9 million reached a record high and were approximately $10 million above the level of 1957. Increased receipts from exports, gold, and miscellaneous invisibles in 1958 more than offset reduced receipts from U.S. Government expenditures. Foreig exchange disbursements of $661.2 million were approximately $85 million less than in 1957. Reduced expenditures on imports of $135 million more than accounted for this decline which was partially offset by increased Philippin Government disbursements.

Largely as a result of cutbacks in imports, international reserves at the end of 1958 were $5 million above the 1957 year-end reserves:

Year	Mil. dol.
1950	355.91
1951	303.87
1952	305.88
1953	295.98
1954	272.69
1955	209.21
1956	224.69
1957	140.03
1958	145.30

The 1957 figure included $40 million in short-term credits from U.S. comcercial banks. The 1958 figure included only $35 million in such credits; therefore, the year reserves actually rose by $10 million.

Table 6.--Balance of payments, 1957 and 1958

	1957	1958
	Million dollars	Million dollars
Receipts:		
Merchandise exports, c.i.f.	440.7	451.0
Gold	6.0	11.2
U.S. Government expenditures	108.7	92.5
Miscellaneous invisibles	107.6	119.2
Total	663.0	673.9
Disbursements:		
Merchandise imports, c.i.f.	658.1	523.4
Government disbursements	13.9	54.9
Miscellaneous invisibles	75.7	82.9
Total	747.7	661.2
Net receipts	--	12.7
Net disbursements	84.7	--

Exchange controls administered by the Central Bank of the Philippines are the principal factors influencing the conduct and direction of foreign trade. Restrictions on foreign exchange allocations have been kept under tight control because of low dollar reserves. Dollar reserves as of the middle of 1959 were sufficient to cover normal imports for only about 3 months.

Total exports during 1958 were valued at $460 million, up 11 percent from 1957. Imports, on the other hand, of $553 million were off 11 percent, largely as result of cutbacks in dollar allocations for imports. Greater physical volume and higher unit prices both contributed to the increased level of exports. Larger shipments of sugar and lumber more than offset reduced shipment of copra, abaca, and base metals.

Agricultural Exports

The share of agricultural exports in total export value, though still large, has followed a downtrend. In 1958 this share was 73.3 percent compared with 81.4 percent for the 1950-54 average.

During the past 5 years coconut products, including copra, coconut oil, desiccated coconut, and copra cake and meal, have accounted for approximately half of the agricultural export value. Sugar and molasses have accounted for about one-third and abaca for about one-tenth. Other significant agricultural exports include canned pineapples and leaf tobacco. There are no direct export subsidies authorized by the Philippine Government, although dollar retention on barter permits is an indirect form of export subsidy.

The United States has been the traditional market for Philippine products. In 1957, 52 percent of all exports by value went to the United States, 18 percent to Japan, and 20 percent to northwestern Europe. In recent years Japan and northwestern Europe have been increasing in importance as markets for Philippine products, while the U.S. share has declined slightly.

For individual Philippine products, the principal markets in 1957 were as follows: Copra--United States, Netherlands, Colombia, Federal Republic of Germany, Sweden, Belgium, Denmark, and Norway; coconut oil--United States and Netherlands; and abaca--United States, Japan, United Kingdom, Federal Republic of Germany, and Belgium. The United States purchases almost all the pineapples, desiccated coconut, and centrifugal sugar that is exported.

Exports of native leaf tobacco amounting to about 14.3 million pounds were 21 percent below the previous year. Shipments to Spain, the principal destination, declined about 18 percent, while Belgium took only about 75 percent of its 1957 imports. Exports of stems and scraps in 1958 were the largest ever recorded. The United States absorbed the bulk of shipment in 1958, taking 7.5 million pounds, or 94 percent of the total.

A barter program with the United States in 1958 was responsible for the first sizable exports of Philippine-grown Virginia-type tobacco. Total exports in 1958 were 9 million pounds, of which about 5.3 million pounds were shipped to the United States. The tobacco was low grade, mostly sun-dried, which was not suitable in the manufacture of quality tobacco products. West Germany and Austria were the other destinations, taking 3.4 and 0.4 million pounds, respectively.

On the surface, the record for agricultural exports in 1958 looks good, showing a 7.4 percent increase over 1957. This picture is somewhat misleading, however, and does not indicate that the campaign to expand production of export commodities was successful. Most of the increase can be contributed to the fact that in 1957 the amount of sugar needed for domestic consumption was underestimated and yields were below expectations, resulting in failure to fill the U.S. quota. In 1958, both the U.S. and Free World quotas were filled, and some sugar was shipped against the 1959 quota. The high prices received for coconut products and abaca partially conceal the fact that the physical volume of exports of these commodities dropped by about 23 percent below 1957. Drought and disease were the major factors reducing production of these commodities.

The substantial overvaluation of the peso puts much pressure on exporters. Even though world prices for copra and abaca have been high, almost at record levels, domestic prices are not high enough to stimulate increased efforts to expand production. Only when so-called barter deals, which are really dollar retention schemes that allow import rights to be sold or utilized, are made can exporters make much profit.

Table 7.--Farm products: Exports by commodity groups, average 1950-54, annual 1955-58

Commodity group	Average 1950-54	1955	1956	1957	1958
	Million U.S. dol.	Million U.S. dol.	Million U.S. dol.	Million U.S. dol.	Million U.S. dol.
Livestock and animal products....	.3	.4	.5	(1/)	(1/)
Cereals and preparations.........	.5	(1/)	(1/)	(1/)	(1/)
Fruits, nuts, and vegetables.....	24.9	21.0	22.5	25.7	22.8
Sugar and preparations...........	86.1	107.7	107.5	84.8	120.1
Tobacco, unmanufactured..........	3.5	3.4	4.9	3.3	7.9
Fats, oils, and oilseeds.........	144.5	137.1	156.9	154.8	149.3
Rubber...........................	.4	.3	(1/)	(1/)	(1/)
Natural fibers...................	42.8	27.9	36.7	39.8	31.3
Other agricultural products......	4.7	5.4	7.4	5.2	5.2
Total agricultural...........	307.7	303.2	336.4	313.6	336.9
Total all exports............	378.1	413.6	471.4	430.7	459.8
	Percent	Percent	Percent	Percent	Percent
Percent agricultural is of total.	81.4	73.3	71.4	72.8	73.3

1/ Less than $50,000.

Agricultural Imports

Although imports of agricultural products are relatively less important than exports, a significant share of the food consumed, as well as raw agricultural nonfood materials for certain growing industries, is imported.

Despite the Philippine efforts to reach self-sufficiency in such basic foods as rice, corn, and vegetables and to reduce foreign exchange expenditures for agricultural and other products, agricultural imports represented between 18 and 23 percent of total imports by value during 1950-58.

Wheat flour, dairy products, meat and meat products, and rice have been the major food imports in recent years. Wheat flour requirements are imported almost entirely from Canada and the United States. Flour mills beginning operation in the Philippines are expected to reduce wheat flour import requirements. Dairy products are imported mainly from the United States, the Netherlands, and Australia. The United States, Argentina, and Australia supply the bulk of meat and meat products imported.

Since 1950, Thailand has been the principal source of Philippine rice imports, with Burma and the Indo-Chinese countries being secondary sources. The United States, however, became the principal source in 1958, supplying 38 percent of the Philippine rice imports. Thailand was the second largest supplier, with about 27 percent of the total. South Vietnam and Burma each supplied 15 percent and Cambodia 5 percent of the total rice imports in 1958. Imports of rice from the United States consisted of 17,086 tons from the 1957 Public Law 480 agreement which arrived early in 1958, and 31,358 tons bartered with refractory chrome ore under Title III of that law.

Raw cotton and tobacco are the most important nonfood agricultural imports and are obtained almost entirely from the United States. Until recently the Philippines imported little raw cotton, but under an ICA-sponsored project, spinning and weaving mills are being developed, requiring raw cotton. Tobacco imports, on the other hand, have declined rapidly in recent years as a result of import restrictions and are now virtually prohibited.

Rice imports during 1958 showed the largest gain of any agricultural commodity, $20 million against $7 million in 1957. Raw cotton registered the second largest gain. Total imports of cotton in 1958 amounted to $8 million, an increase of 50 percent over the previous year. Another substantial gain is expected in 1959, as mill capacity is being rapidly expanded.

Imports of evaporated and condensed milk declined substantially during 1958. Evaporated milk imports valued at $15 million were 34 percent below 1957, while condensed milk imports valued at $4 million were 26 percent less than 1957. Decreased imports of these products can be attributed to the greatly increased production of filled milk. Sizable imports of nonfat dry milk under PL 480, however, covered part of the loss in evaporated milk imports. The expanding output of local evaporated filled milk assures a continued market for nonfat dry milk.

Although technically decontrolled, flour imports have actually been controlled informally by the Central Bank. The Bank is controlling the total volume of imports in order to insure that the domestic producer, Republic Flour Mill, is able to sell all the flour it produces. Informal quotas are being established that give preference to Filipino importers. Some uncertainty still exists as to exactly how these quotas are being administered. Additional milling capacity is expected to be in operation in 1960, thus further reducing the present rate of imports. The Republic Mill is capable of supplying about one-fourth of Philippine requirements.

Because of the expected bumper harvest of rice and corn and optimistic hopes for the future, the President signed into law on May 15, 1959, a bill prohibiting importation of rice and corn. The new law is primarily aimed at protecting and promoting the interests of producers and planters of rice and corn to foster and accelerate self-sufficiency. There is a provision in the new law, however, that should there be an existent or imminent shortage in the local supply of such gravity as to constitute a national emergency, the President may authorize the importation of these cereals in such quantities as to cover the shortage.

An exchange margin bill signed into law on July 16, 1959, will increase the peso cost of most imports between 25 and 40 percent. A few agricultural commodities are exempt, but most of the items making up the bulk of U.S. agricultural exports to the Philippines will be subject to the 25-percent margin fee set for the first year the law is in effect. Raw cotton is exempt only if imported under the provisions of Public Law 480 or Section 402 of the Mutual Security Act. Milk products that are not locally produced are also exempt. Large quantities of agricultural products will continue to be imported under the exchange control policy, though probably at a declining rate.

Table 8.--Farm products: Imports by commodity groups, average 1950-54, annual 1955-58

Commodity group	Average 1950-54	1955	1956	1957	1958
	Million U.S. dol.	Million U.S. dol.	Million U.S. dol.	Million U.S. dol.	Million U.S. dol.
Livestock and animal products....	25.9	36.7	38.8	45.2	42.0
Cereals and preparations.........	29.5	34.6	26.2	36.9	52.0
Fruits, nuts, and vegetables.....	5.4	5.5	4.6	5.5	3.5
Sugar and preparations...........	.6	.7	.5	.5	.4
Tobacco, unmanufactured..........	9.1	12.7	4.6	.1	2.6
Fats, oils, and oilseeds.........	3.4	2.7	3.7	3.6	2.5
Rubber...........................	(1/)	(1/)	.7	2.0	2.2
Natural fibers...................	2.0	2.8	4.8	7.8	10.3
Other agricultural products......	11.4	11.9	8.3	10.4	7.3
Total agricultural...........	88.0	107.6	92.2	112.0	122.8
Total all imports............	432.2	536.3	509.6	621.4	553.3
	Percent	Percent	Percent	Percent	Percent
Percent agricultural is of total.	20.4	20.1	18.1	18.0	22.2

1/ Less than $50,000.

Trade With the United States

Trade patterns between the United States and the Philippines are undergoing considerable change. Most of the changes are in agricultural imports from the United States. Philippine import restrictions, technological progress, changing food tastes, and a rapidly increasing population are factors which have altered the trade patterns.

As a result of increased industrialization of the country and probable continued shortage of dollar reserves, the next few years are apt to see greater emphasis on imports of agricultural raw materials rather than on

Table 9.-- Farm products: Value of U. S. exports to the Philippines by commodity groups, 1955-58

Commodity group	1955	1956	1957	1958
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Livestock and animal products:				
Meat and preparations........	3,057	3,039	2,920	897
Dairy products..............	20,945	24,225	25,706	21,108
Other......................	-	-	347	507
Total.....................	24,002	27,264	28,973	22,512
Cereals and preparations:				
Corn.......................	-	-	681	1
Rice.......................	-	-	2,519	8,437
Wheat flour................	10,178	10,550	14,467	18,950
Other......................	1,193	726	766	1,069
Total.....................	11,371	11,276	18,433	28,457
Fruits, nuts and vegetables....	4,431	3,873	5,076	2,165
Tobacco, unmanufactured........	11,423	1,682	190	2,804
Fats, oils and oilseeds........	1,554	1,622	2,766	2,980
Cotton, unmanufactured.........	2,200	4,137	6,001	11,595
Other agricultural.............	4,996	3,861	6,831	5,182
Total agricultural..........	59,977	53,715	68,270	75,695
Total all exports...........	338,444	317,857	367,403	289,678
	Percent	Percent	Percent	Percent
Percent agricultural is of total	17.7	16.9	18.6	26.1

Table 10.-- Farm products: Value of U. S. imports from the Philippines by commodity groups, 1955-58

Commodity group	1955	1956	1957	1958
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars
Fruits and nuts:				
Pineapples and preparations...	5,439	8,184	9,680	5,866
Coconut meat, desiccated......	12,097	11,516	14,440	14,196
Fats, oils and oilseeds:				
Coconut butter and oil........	16,297	19,582	20,020	26,662
Copra.........................	45,168	41,879	41,135	47,451
Sugar..........................	109,127	105,748	101,237	110,586
Tobacco, unmanufactured.........	689	1,685	2,012	1,906
Natural fibers:				
Abaca.........................	7,958	12,113	14,958	10,704
Other.........................	-	50	129	161
Total........................	7,958	12,163	15,087	10,865
Other agricultural..............	5,375	2,741	3,411	2,760
Total agricultural............	202,150	203,498	207,022	220,291
Total all imports.............	251,457	256,598	261,380	271,029
	Percent	Percent	Percent	Percent
Percent agricultural is of total	80.4	79.3	79.2	81.3

those of food commodities. Opportunity for expanding U.S. agricultural exports to the Philippines lies in three commodities--cotton, dry milk solids, and wheat.

With the rapid development of the Philippine textile industry, there will be fewer cotton textile imports. Raw cotton imports, however, will be needed as there is little hope for greatly increased local cotton production.

Evaporated filled milk plants are operating in the Philippines using dry milk solids and coconut oil for fat content. This product is well accepted by the consumers and undersells evaporated milk. The result has been a shift from canned milk imports to imports of dry milk solids.

Wheat flour has grown in importance in the Filipino diet, with rolls and bread becoming a popular breakfast food for the urban population. The first Philippine wheat flour mill began operation late in 1958. With the establishment of four additional mills, which have been approved, a shift from imports of flour to imports of grain is expected. Completion of the flour mills will allow the country to mill locally its requirements for over 200,000 tons of wheat flour annually.

Although the Philippines imported 74,429 metric tons of milled rice from the United States in 1958, it is doubtful that it will provide a market for U. S. rice in the future. The recent increase in local production coupled with the ban on rice and corn imports practically eliminates the market for these commodities. Trade restrictions have also virtually eliminated tobacco imports.

Still more changes are expected to result from the revised Trade Agreement of 1956 between the two countries. Under the Laurel-Langley Act the Philippine duty rate on U.S. products increased from 25 to 50 percent of the full rate on January 1, 1959. In 1964 the rate will increase to 75 percent and finally to 100 percent in 1974. The U.S. duty on Philippine products, which had been 5 percent of the full rate, increased to 10 percent on January 1, 1959. It is to be gradually raised until 1974, when the full rate becomes effective. In addition to these duties, Philippine sugar and cordage sent to the United States are subject to annual absolute quotas fixed by the agreement at 952,000 short tons for sugar and 6,000,000 pounds for cordage until 1974. The agreement also establishes annual duty-free quotas to the United States for some other products of agricultural origin: cigars, 200,000,000; cigar filler tobacco, 6,500,000 pounds; and coconut oil, 200,000 long tons. These quotas are to be decreased every 3 years until their elimination in 1974. Imports in excess of these quotas are subject to the full duty rate.

Unless some means for developing trade is implemented, the United States will become less competitive in the Philippine market and commercial imports of U.S. agricultural products will be reduced.

AGRICULTURAL DEVELOPMENT

The major long-range agricultural policies of the Philippine Government may be summarized briefly as follows: (1) To become self-sufficient in the basic food items, particularly rice and corn; (2) to expand production and improve quality of dollar-earning and dollar-saving commercial crops, such as copra, abaca, sugar, and lumber; (3) to develop agricultural credit and agricultural marketing systems that will drastically reduce the usurious interest rates and the excessive marketing margins now being collected by middlemen, mostly non-Filipinos; (4) to modernize and generally improve the efficiency of Philippine agriculture through research, education, and extension; and (5) to improve living conditions of Philippine farmers, primarily through community development projects.

Other goals, given somewhat less emphasis, are the agricultural development of areas not now under cultivation, the improvement of the land tenure system, and the protection and conservation of the country's natural resources.

The Philippine Congress has adopted a 4-year program designed to achieve self-sufficiency in rice and corn. Output is to be promoted through the expansion of irrigation facilities, research, and experimentation on seed varieties, production and distribution of registered and certified seed, procurement and distribution of fertilizers and soil conditioners, control of plant pests, agricultural information and demonstration farms, and purchases of modern rice and corn processing mills.

During 1958 substantial progress was made toward this goal. Total agricultural production during the July 1958-June 1959 crop year was the largest on record and 7 percent above that of the previous crop year. For the first time in years, the rice and corn crops were almost sufficient to supply domestic needs. Many basic foods, however, such as wheat, meat, and dairy products must still be imported in large quantities.

A setback occurred during the 1958-59 crop year in the production of dollar-earning crops.* Production and exports of two of the major export crops, copra and abaca, declined sharply. Little progress was made in combating the very serious diseases, cadang-cadang of coconut and mosaic of abaca.

An even more severe setback has been experienced recently in the credit and marketing programs. The Agricultural Credit and Cooperative Financing Administration (ACCFA) suffered a series of blows to its prestige and stability because of well-founded charges of graft and mismanagement, the impairment of its capital, dissension among its top officials, and the withdrawal of the government's annual subsidy. The future of this organization, which has been the main hope for the improvement of the small farmer, looks uncertain.

The agricultural research and education programs progressed satisfactorily during 1958, but extension of new and improved materials and methods to the farmer continues to be a major weakness.

The community development program, in spite of some duplication of effort and some poorly advised projects, is probably the most vital and productive program under government sponsorship.

Foreign assistance programs are continuing to operate; however, the U.S. agricultural assistance programs have been shrinking rapidly. The Ford and Rockefeller Foundations have announced plans to establish jointly an important regional Rice Research Institute in the Philippines. The model institution will cover all aspects of the rice industry, including work in breeding, culture, processing, and utilization.

Although the goal of self-sufficiency is not likely to be achieved in the next few years, further gains in production are probable. Total agricultural output now stands more than 50 percent above the average for 1935-39, and per capita output at approximately the 1935-39 level.

Climatic limitations for many crops and livestock coupled with the annual population increase make the Philippines' goal of virtually complete self-sufficiency in foodstuffs a costly and difficult achievement.

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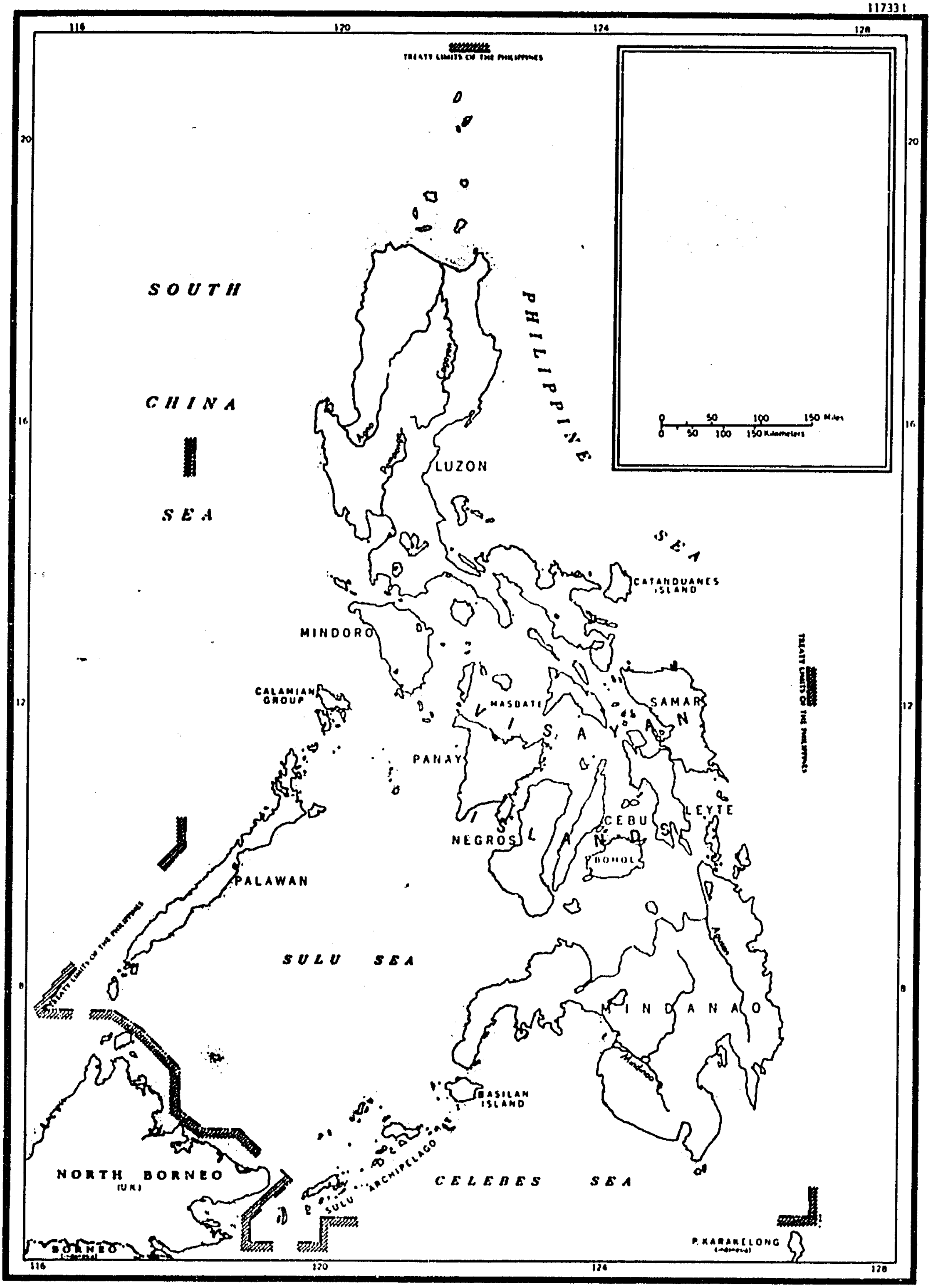

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